

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application.

**LISTING OF CLAIMS:**

1. (Currently amended) A inter-symbol-interference (ISI) coder comprising:
  - a mapper operational to map at least one sequence of input symbols sequence into a set of multiple sequences of extended symbols and to select the extended symbols from a same grid associated with the input symbols to yield a same minimum distance; and
  - a linear ISI filter operational to generate coded output symbols in response to the set of multiple sequences of extended symbols.
2. (Original) The ISI coder according to claim 1, wherein the linear ISI filter is selected from the group consisting of an finite impulse response (FIR) filter, and an infinite impulse response (IIR) filter.
3. (Original) The ISI coder according to claim 1, wherein the linear ISI filter is configured such that its convolution with a channel impulse response yields a desired ISI generating pattern.
4. (Cancelled).
5. (Original) The ISI coder according to claim 1, wherein the mapper has a transform that is invertible such that no two input sequences are mapped into the same sequence of extended symbols.

6. (Cancelled).
7. (Currently amended) A method of channel coding, the method comprising the steps of:
- ~~providing a non-linear precoder; and~~
- ~~mapping at least one input symbol sequence into a set of multiple sequences of extended symbols;~~
- ~~generating coded output symbols in response to the set of multiple sequences of extended symbols; and~~
- ~~selecting the extended symbols from a same grid associated with the input symbols to yield a same minimum distance.~~
- ~~inserting deliberate inter-symbol-interference (ISI) into an input signal via the non-linear precoder such that input data is mapped into a lattice having a better distance spectrum than an uncoded QAM signal while retaining a substantially unchanged power level from the uncoded QAM signal.~~
8. (Cancelled).
9. (Currently amended) The method according to claim 7, further comprising wherein the step of inserting deliberate ISI into an input signal comprises the steps of:
- ~~mapping at least one input symbol sequence into a set of multiple sequences of extended symbols; and~~
- convolving a linear filter with an associated channel impulse response to yield a desired inter-symbol-interference (ISI) generating pattern.

10. (Cancelled).